

ENCLOSURE 1

Revised PM_{2.5} Designation Recommendations Additional Technical Justification for Deviations from Presumptive Nonattainment Boundaries June 1, 2004

In developing Pennsylvania's PM_{2.5} designation recommendations, U.S. Environmental Protection Agency (EPA) guidance was considered. EPA has issued two guidance memos related to PM_{2.5} designations. The first guidance memo from EPA Assistant Administrator Jeffrey R. Holmstead was dated April 1, 2003. The April 1, 2003 guidance memo explained that EPA intends to apply a presumption that the boundaries for urban nonattainment areas should be based on Metropolitan Area boundaries, as defined by the Office of Management and Budget (OMB) and published on June 30, 1999.

The guidance memo listed factors that EPA will consider if states request nonattainment area boundaries that are different from OMB's metropolitan area definitions. These factors are:

- Emissions in areas potentially included versus excluded from the nonattainment area
- Air quality in potentially included versus excluded areas
- Population density and degree of urbanization including commercial development in included versus excluded areas
- Traffic and commuting patterns
- Expected growth (including extent, pattern and rate of growth)
- Meteorology (weather/transport patterns)
- Geography/topography (mountain ranges or other air basin boundaries)
- Jurisdictional boundaries (e.g., counties, air districts, Reservations, etc.)
- Level of control of emission sources

EPA issued additional guidance on February 12, 2004 on the PM_{2.5} designation process, in the form of a memo from Lydia N. Wegman. The additional guidance indicated that OMB's revised Metropolitan Area boundaries, issued June 10, 2003, should also be considered in States' recommendations and in EPA's review and determination of PM_{2.5} designation boundaries.

In a letter, dated April 22, 2004, EPA Region III, Air Protection Division Director, Ms. Judith M. Katz, requested additional technical justification for any county that deviates from the presumption that the entire metropolitan statistical area (MSA) that contains a county with a violating monitor be designated nonattainment. In Pennsylvania, these counties include: Mercer, Butler, Armstrong, Fayette, Adams, Pike, Perry, and Somerset. In addition, in informal discussions, EPA has indicated that Greene, Lawrence, Indiana, Clearfield, Northampton, and Lehigh Counties are also under consideration for addition to PM_{2.5} nonattainment areas. DEP has concluded based on further review that three counties initially recommended, as nonattainment, Lebanon, Bucks, and Montgomery, should be designated attainment. This document discusses how the factors cited in EPA guidance relate to each of these counties.

Revised PM_{2.5} Designation Counties

Bucks and Montgomery Counties. Pennsylvania is officially requesting that Bucks and Montgomery Counties be designated as attainment areas. This is a revision of our initial recommendations for these counties. During the course of analyzing data to provide additional technical justification requested by EPA, DEP concluded that it was inappropriate to include Bucks and Montgomery in the Philadelphia nonattainment area. Bucks and Montgomery are both monitoring attainment with the PM_{2.5} standard, 14.4 and 14.3 ug/m³, respectively for the 2001-2003 time period. Additionally, the nearby monitor in Northeast Philadelphia is also monitoring attainment, 13.8 ug/m³.

Emissions levels of appropriate pollutants in these two counties were also reviewed. Based on EPA's own data, recently provided, emissions of appropriate pollutants show that their impact would be expected to be small.

The wind roses from nearby Allentown and Philadelphia show that these two counties are predominantly downwind of the monitors in the Philadelphia area measuring nonattainment of the PM_{2.5} standard. Emissions in these monitored attainment counties would, therefore, have a minimal impact on air quality in the nonattainment portion of the area.

Lebanon County. While Lebanon County does not have a PM_{2.5} monitor a review of emissions data for the area shows very low emission levels based on data recently provided by EPA. Throughout Pennsylvania non-urban and non-industrial areas consistently demonstrate attainment. Thus, there is no reason to conclude that this area should be presumed to be in nonattainment.

Eight Counties Adjacent to MSA's for which EPA Formally Requested Additional Information

Mercer County. Mercer County was not included in the Youngstown MSA as defined by OMB in the June 30, 1999 definitions. Mercer County was added to the Youngstown Combined Statistical Area (CSA) in the June 2003 definitions. The Youngstown CSA has a design value of 15.2 based on monitoring data from Mahoning County. Mercer County is monitoring attainment with the PM_{2.5} standard with a design value of 14.2 ug/m³. Emissions in Mercer County are low, and additionally, would have little impact on the nonattainment area due to the fact that Mercer County is downwind of the monitors that are exceeding the PM_{2.5} standard.

Butler and Fayette Counties. Butler and Fayette Counties contain no significant sources of emissions. Therefore, these counties do not contribute to the PM_{2.5} nonattainment levels monitored elsewhere in the Pittsburgh Consolidated Metropolitan Statistical Area (CMSA). While neither county contains a monitor, based on monitored PM_{2.5} levels in similar non-urban, non-industrial counties, there is no reasonable basis to conclude that these counties should be nonattainment. After reviewing EPA's ranking data for the Pittsburgh Area provided by at the EPA Region III Air Directors meeting in Solomon Island, Maryland on May 26, it is apparent that Butler and Fayette counties score very low in EPA's emission weighting scheme. Additionally, both counties have low population density and VMT. Population is projected to decline further over the next decade. Based on all of these factors, DEP remains convinced that it is inappropriate to designate Butler and Fayette Counties as nonattainment for the PM_{2.5} standard.

Armstrong County. Armstrong County was not included in the Pittsburgh MSA as defined by OMB in the June 30, 1999 definitions. It was added to the Pittsburgh CSA in the June 2003 OMB report. Armstrong County has very low population density and

VMT. County population is projected to decline substantially over the next decade. In addition, DEP has collected monitoring data from a TEOM monitor in the Kittanning area. For the 2001-2003 time period this monitor averaged 14.3 ug/m³ demonstrating that the county has PM_{2.5} levels that achieve the standard. Armstrong County does have substantial emissions of sulfur dioxide (SO₂) and nitrogen oxides (NOx). However, virtually all (99.8 % of the SO₂ and 86.4% of the NOx) of these emissions can be attributed to the county's two large power plants, Armstrong and Keystone. The Armstrong plant is equipped with rotating over-fire air, electrostatic precipitators (ESPs) and low NOx burners. The larger of these two plants, Keystone, is located on Armstrong County's eastern border and is equipped with SCR on both units to reduce emissions of nitrogen oxides. An examination of the wind rose from Pittsburgh supports the conclusion that these emission sources would have virtually no impact on the monitors in the Pittsburgh area that are monitoring nonattainment of the PM_{2.5} standard. In addition, it has long been Pennsylvania's position that it is imperative that emissions from large point sources, such as power plants, be addressed through a consistent national or regional control program. EPA's recently proposed Clean Air Interstate Rule (CAIR) would be an appropriate mechanism for addressing these emissions provided more stringent emission caps and timely compliance schedules are promulgated. .

At the recent EPA Region III Air Directors meeting, EPA presented the Pittsburgh data used for the new emissions ranking system used by EPA to identify adjacent counties to be added to nonattainment areas. The ranking data for other areas has yet to be released by EPA. Armstrong and Washington counties demonstrate that absurd conclusions can be drawn from EPA's ranking process. Washington County rates a weighted emissions score of 10.6. Depending on the "cut point" chosen, this would normally indicate that based on emissions this county could be excluded from the nonattainment area. Indiana County had a weighted emissions score of 60.6 making it higher than Allegheny County, where the major nonattainment values exist due to predominately local emissions. The problem is of course that Armstrong County monitors attainment while Washington County, with a five-fold lower weighted emissions score, monitors nonattainment. Clearly the rating process must be employed with extreme caution.

Adams County. Adams County was not part of the York MSA in OMB's June 30, 1999 definitions. It was included in the York-Hanover-Gettysburg CSA in the June 10, 2003 report. DEP recommended Adams County as attainment for the PM_{2.5} standard, and we remain convinced that attainment is the appropriate designation. Adams County is clearly monitoring attainment with a design value of 13.4 ug/m³. Emissions from Adams County are low and would have a negligible impact on the area monitoring nonattainment.

Perry County. Perry County is part of the Harrisburg-Carlisle-Lebanon MSA. Perry County is a rural, non-industrial county with a very low population density. Perry County is monitoring attainment with the PM_{2.5} standard with a design value of 13 ug/m³. Emissions in Perry County are minimal and would have a negligible impact on the monitors that are exceeding the standard in Dauphin County.

Pike County. Pennsylvania recommended that Pike County be designated attainment for PM_{2.5}. After reviewing additional data, including the data contained in the spreadsheet provided by EPA to STAPPA, we conclude that attainment is the only logical designation for Pike County. Pike County has extremely low emissions and population density. VMT is also very low. Pike County is not part of the New York City eight-hour ozone nonattainment planning area. There is clearly no reason for EPA to contemplate designating Pike County as anything other than attainment of the PM_{2.5} standard.

Somerset County. Somerset County was part of the Johnstown MSA in the June 30, 1999 OMB definitions. It was not included in any MSA in the June 10, 2003 OMB report. Somerset County is a rural, non-industrial county with very low population density and emissions. It would be illogical to include Somerset County in the Johnstown nonattainment area because it has minimal emissions that could potentially impact the nonattainment area.

Six Counties Adjacent to MSA's EPA Informally Indicated for Consideration

Greene County. Greene County is adjacent to the Pittsburgh MSA. Greene County is a rural, non-industrial county with very low population data and VMT. Emissions from Greene County are dominated by a single power plant, Allegheny Energy Supply's Hatfield's Ferry Power Station which is equipped with low NOx cell burners and ESPs. One of the units has rotating over-fire air and SNCR. Emissions from this single facility account for 99.5% of the county's SO₂ emissions and 86.1% of the NOx emissions. This plant will also be subject to the Best Available Retrofit Technology (BART) requirement under the regional haze program. As discussed above, Pennsylvania believes that a national or regional multi-pollutant rule is the appropriate mechanism to address emissions from large point sources. Adding Greene County to the Pittsburgh nonattainment area is not a logical or efficient way to address the emissions from the county's power plant.

Lawrence County. Lawrence County was not included in the Pittsburgh MSA in the June 30, 1999 OMB definitions. OMB's June 10, 2003 report added Lawrence County to the Pittsburgh MSA. For ozone, Lawrence County has historically been a stand-alone planning area not included in the Pittsburgh nonattainment area. Lawrence County has relatively low and declining population density. Lawrence County also has relatively low emissions and the bulk of the SO₂ emission (81%) would be addressed by EPA's proposed CAIR provided more stringent emission caps and timely compliance schedules are promulgated. These emissions are from the older New Castle power plant located in the county and covered by BART. All three of the units at the plant are controlled by selective non-catalytic reduction (SNCR) and ESPs. Based on a review of the available data, DEP believes that attainment is the correct designation for Lawrence County.

Indiana and Clearfield Counties. In informal discussions, EPA has indicated that Indiana and Clearfield Counties are being considered for addition to the Johnstown PM_{2.5} nonattainment area. Indiana County was also included in the Pittsburgh analysis shown by EPA at the Region III Air Directors meeting. These counties are rural, non-industrial counties that are not associated with any MSA. Clearfield County has relatively low emissions, and the existing county emissions can be attributed to a single older power plant accounting for 96.8% and 58.6% of the SO₂ and NOx emissions, respectively. In addition, based on review of wind field data, emissions originating in Clearfield County would not impact Cambria County that contains the monitor exceeding the PM_{2.5} standard. The Shawville power plant is equipped with a SO₂ scrubber on Unit 2 and it has low NOx burners on Units 1 and 2. Low NOx 3-cell burners control units 3 and 4 at the Shawville plant.

Indiana County has relatively high emissions, but, again, these are mainly attributable to the county's three power stations – accounting for 99.4% of the SO₂ and 91.5% of the NOx emissions. These are facilities that will be subject to BART and EPA's CAIR following promulgation. The Seward Station was recently shut down and replaced with modern well-controlled fluidized bed units. The Conemaugh Station is equipped with

sulfur dioxide scrubbers and ESPs on both units. The Homer City Station has one of its three units equipped with sulfur dioxide scrubbers and all three units are equipped with SCR, low NOx burners and ESPs. The remainder of emissions from Indiana and Clearfield Counties would have a negligible impact on either the Pittsburgh or Johnstown areas.

Northampton County. Northampton County is part of the Allentown-Bethlehem-Easton MSA. Northampton County has a design value 14.5 ug/m^3 and is monitoring attainment at both monitors located in the county. In addition, there are multiple other monitors (all measuring $\text{PM}_{2.5}$ attainment) located in Bucks, Montgomery, and Philadelphia Counties between the major point sources in Northampton County and the monitor that exceeds the standard in Philadelphia County. In addition, evaluation of wind patterns as evidenced by the Philadelphia wind rose, indicates that the emissions sources in Northampton County would have minimal impact on the Philadelphia County monitor that is exceeding the standard.

A review of emissions data shows that significant reductions have taken place at the Martins Creek Power Plant. Recently, the owner has decreased the sulfur content of the oil burning units by 30%. All auxiliary boilers and combustion turbines have been converted from oil to natural gas. This amounts to a reduction of greater than 5,000 tons per year of sulfur dioxide. Under the terms of the settlement agreement amongst Pennsylvania, New Jersey and PPL, there will be an additional reduction of 14,000 tons of sulfur dioxide, 3,500 tons of nitrogen oxides and 458 tons of particulate matter with the closure of the two coal fired units in September 2007. Pertinent terms and conditions including the September 2007 shutdown date will be included in a federally enforceable plan approval no later than June 30, 2004 and subsequently included in the Title V permit for the Martins Creek facility.

Lehigh County. Lehigh County is part of the Allentown-Bethlehem-Easton MSA. Lehigh County is monitoring attainment with the $\text{PM}_{2.5}$ standard with a design value of 14.5 ug/m^3 . DEP is perplexed by EPA's indication that Lehigh County is being considered for addition to the Berks County nonattainment area. In addition to monitored attainment for the $\text{PM}_{2.5}$ standard, Lehigh County has relatively low emissions. Sources in Lehigh County, therefore, are not contributing significantly to nonattainment problems in Berks County or other counties. Examination of wind rose plots shows that Lehigh County is predominantly downwind of Berks County. Based on all of this information, Pennsylvania strongly recommends that Lehigh County be designated attainment with regard to the $\text{PM}_{2.5}$ standard.